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Total Number of Pages: 02

Course: B.Tech  
Sub\_Code: PME41102

4<sup>th</sup> Semester Back Examination: 2023-24  
SUBJECT: Basic Manufacturing Process  
BRANCH(S): MECHANICAL

Time: 3 Hour

Max Marks: 100

QP.Code: P136

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions: (2 x 10)

- Why a sprue should be tapered?
- What are advantages and disadvantages of casting?
- Why draft allowance is important for pattern?
- What are the different types of power sources used in arc welding?
- Write short notes on Soldering.
- What is the difference between hot working and cold working?
- Define upsetting in forging process.
- Bring out the difference between three-high and four high rolling mills.
- What do you mean by extrusion process?
- What is GI coating and its applications?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Describe the operation of a cupola furnace for melting cast iron.
- Describe the allowances given on pattern for shaking and distortion.
- Sketch, differentiate and describe the following briefly.  
(I) Neutral flame (II) Carburizing flame(III) Oxidizing flame
- Explain the following,  
(I) Permeability (II) Cohesiveness(III) Adhesiveness and (IV) Collapsibility
- What do you understand by powder metallurgy? What are the main stages of powder Metallurgy process?
- Explain the meaning of the expression 'metal forming'. Mention the names of five metalforming processes.
- Describe the process of rolling. Illustrate your answer with a suitable explanatory sketch.

- h) Explain the mechanics of shearing of sheet-metals.
- i) Describe the process of 'tube making'.
- j) Write short note on sheet metal working processes?
- k) Explain Deep drawing operation with diagram and its application.
- l) Describe friction welding and its limitations.

**Part-III**

**Only Long Answer Type Questions (Answer Any Two out of Four)**

- Q3** Describe the various kinds of patterns in use. What are the allowances provided, when making a pattern? How do the patterns differ from the casting required? **(16)**
- Q4** Name the different equipment used in electric arc welding. What are the general precautions to be observed during electric arc welding? Compare A.C. and D.C. welding. **(16)**
- Q5** Describe some common forging and rolling defects and their causes with neat sketch. **(16)**
- Q6** Explain the difference between direct and indirect extrusion processes with the help of explanatory sketches and its application. **(16)**